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SB ALL @ AMSAT $ANS-126.01
AMSAT & DAYTON A GREAT SUCCESS

HR AMSAT NEWS SERVICE BULLETIN 126.01 FROM AMSAT HQ
SILVER SPRING, MD MAY 6, 1989
TO ALL RADIO AMATEURS BT

The Dayton Hamvention '89 Was The "Finest" In AMSAT-NA History

AMSAT-NA President, Doug Loughmiller (KO5I), is proud to announce that "this was the finest Dayton Hamvention that AMSAT-NA has ever participated in." The list of volunteers supporting Doug at the AMSAT booth reads like a "Who's Who in AMSAT" with the following volunteers: John Champa (K8OCL), Tom Clark (W3IWI), Sue Crabtree (N0GUT), Jack Crabtree (AA0P), Ron Curry (WA4GSS), Courtney Duncan (N5BF), Rich Ensign (N8IWJ), Dave Filmer (WB9QBP), John Henry (VE2VQ), Jan King (W3GEY), Larry Koziel (K8MU), K.O. Lerner (K9PVW), Bob McGwier (N4HY), Keith Pugh (W5IU), Bob Rogers (W8JLE), Roy Welch (W0SL), and Jim White (WD0E). So intense was the attention given to the AMSAT booth by the attendees of the Hamvention, it was evident that there was always a major "traffic jam" in front of the AMSAT booth. Many a passerby was unable to resist the urge to come by to gaze at the MICROSAT model and also to stare intently at the computer monitors "showing off" QUIKTRAK 4.0 (QT 4.0) and ORBITS IV satellite tracking programs. The MICROSAT model used at Dayton was the vibration "test" prototype which had real solar cells and real antennas. Only the "innards" were fake. Many an amateur who had previously been uninterested in OSCAR satellites found themselves leaving the AMSAT booth not only a member but also with a copy of QT 4.0 in hand. Over 140 new members were signed up. In addition to satellite tracking software being a "big hit" at the AMSAT booth, so was the "A Beginners Guide to AO-13" authored by Keith Bergland, WB5ZDP. During the Hamvention AMSAT sponsored several well attended forums dealing with everything from "getting beginners started on AO-13" to MICROSATs to the Phase IV Geostationary satellite concept; the speakers were: K8OCL, W3IWI, N5BF, W5IU, W3GEY, KO5I, and N4HY with AA0P acting as "Master-of-Ceremonies" for each of the forums. In general, the enthusiasm shown for AMSAT at Dayton left little doubt that the amateur radio community supports AMSAT in all its major endeavors from MICROSATs to Phase IV. Doug Loughmiller would like to thank all those who came by the AMSAT booth to say hello and helped to make this the best Dayton Hamvention AMSAT-NA has ever had.

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SB ALL @ AMSAT $ANS-126.02
MICROSAT BANDPLAN EXPLANATION

HR AMSAT NEWS SERVICE BULLETIN 126.02 FROM AMSAT HQ
SILVER SPRING, MD MAY 6, 1989
TO ALL RADIO AMATEURS BT

MICROSAT/LUSAT/PACSAT Frequency Selection Done With Great Care

It has been brought to the attention of AMSAT-NA officials that there is a small but vocal minority of radio amateurs who have been questioning the MICROSAT/LUSAT/PACSAT frequency bandplan. As has been announced in articles in AMSAT-NA Journal and "73 Magazine," the uplink frequencies for LUSAT will be the following: 145.840 MHz, 145.860 MHz, 145.880 MHz, and 145.900 MHz; for PACSAT the uplink frequencies will be 145.900 MHz, 145.920 MHz, 145.940 MHz, and 145.960 MHz. The downlink frequencies for

LUSAT and PACSAT will be 437.150 MHz and 437.050 MHz, respectively. AMSAT-NA officials wish to briefly explain the logic for choosing these frequencies for these "store-and-forward" OSCAR satellites.

LUSAT/PACSAT uplink frequencies are all located within the portion of the 2M spectrum designated for the "Amateur Satellite Service" which on 2M includes 145.800-146.000 MHz and on 70cm it includes 435.000-438.000 MHz. Currently the following OSCAR satellites use these frequencies: AO-10, AO-13, FO-12, UO-9, UO-11, and to a limited degree, RS 10/11. However, in many parts of the world, the portion of the spectrum from 145.800-146.000 MHz is heavily populated and virtually unprotected. For example, many amateurs point to the "chaotic" conditions which exist on 2M in Japan. When JARL and JAMSAT were designing FO-12, such heavy QRM problems where considered very carefully. When the designers of the PACSATs also looked at the QRM problem, they too came to the conclusion that Mode JD was the way to go.

From an equipment standpoint, using Mode JD will allow many OSCAR satellite users to use the same equipment they have available for MODE B operations. It should be noted that on the uplink, packets can be sent with a just a few watts from a 2m FM tranceiver. Since most amateurs generally own a 2M FM tranceiver and a HF rig, obtaining a 70cm converter is an easy way to build a "basic" PACSAT station. Thus the designers of the PACSATs felt that Mode JD was a relatively "cheap" way to go for those who wanted to get started on PACSAT operations.

As far as the actual choice of the frequencies for the uplinks to LUSAT and PACSAT, you will notice that they are located on "opposite ends of the spectrum." The decision by the designers to do this was based mostly on considerations of "orbital dynamics." Because all of the MICROSATs will be "dropped off" from the ARIANE rocket at the same time, it will take many months before they "spread out" to the point that they don't all appear in the sky at the same time over a ground station. In order to avoid having users of LUSAT and PACSAT interfering each other during these first several months, the frequencies for the uplinks had to be widely spaced.

As far as PACSAT users interfering with AO-10, AO-13, and the rest of OSCAR satellites, the best possible passes for the MICROSATs will be less than 17 minutes for an "over-head" pass. This means that there will be a potential of 45 minutes worth of QRM. But as everyone who works packet radio knows, packets are by nature very short bursts. Anyone who has listened to FO-12 will also be aware that 90% of the transmissions are very short. Another important consideration is that the PACSATs will NOT allow digipeating. They will only take messages for storage and allow users to read "mail" directed to them or "unconnected" telemetry packets. This provision for not allowing digipeating will help reduce any possibility of QRM caused by unattended beacons.

The final concern is that once radio amateurs hear packets being sent on the satellite "sub-band" of 2M, that terrestrial "packeteers" will also start sending their packets within the 145.800-146.000 MHz spectrum. To the best knowledge of AMSAT-NA officials, this has not happened with current set of OSCAR satellite frequencies and it is not expected to occur when the new PACSATs are launched. Because the equipment to send PSK packets to the PACSATs is quite different from the AFSK packets sent terrestrially, it would appears unlikely that such an "encroachment" would occur on the satellite "sub-band." In general, amateurs hold very strongly to "gentleman" agreements concerning bandplans.

It is hoped that this short discussion here about MICROSAT bandplan can put to "rest" any lingering questions about this issue. In up coming issues of QEX magazine and ASR, Bob McGwier will be discussing this important topic in great detail. In between time, if you have further

concerns or comments, please send them to:

Bob McGwier, N4HY
15 Cherrybrook Lane
East Windsor, NJ
08520

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SB ALL @ AMSAT $ANS-126.03
AO-13 TRANSPONDER SCHED CHANGE

HR AMSAT NEWS SERVICE BULLETIN 126.03 FROM AMSAT HQ
SILVER SPRING, MD MAY 6, 1989
TO ALL RADIO AMATEURS BT

AO-13 Transponder Schedule Change Occurred On May 3, 1989

On May 3, 1989 AO-13's operating schedule was changed by AMSAT ground command station VK5AGR due to the fact that the solar eclipes in which AO-13 had been experiencing have ended for the time being. On June 14, 1989 an attitude change will commence in order to adjust AO-13's attitude to the following Bahn Coordinates: BLONG=180 deg, BLAT=0 deg. This attitude change on June 14th will be performed in order to keep the high-gain antennas "pointing at the earth's center" at apogee. This will also improve "squint" angles for the larger part of each orbit. But until June 14, 1989, please be advised that the transponder operating schedule for AO-13 is the following:

de VK5AGR 15Apr89: *** AO-13 TRANSPONDER SCHEDULE ***
03May89 to 14Jun89

Mode-B : from MA 003 to MA 160
Mode-JL : from MA 160 to MA 200
Mode-B : from MA 200 to MA 240
OFF : from MA 240 to MA 003

Mode S Beacon 2400.661MHz is ON from MA 210 to MA 222 every orbit.
29Apr89: BLON/BLAT 211.8/+3.3 with a drift rate of 0.016/-0.061 deg/day.

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SB ALL @ AMSAT $ANS-126.04
AO-10 RETURNS TO SERVICE

HR AMSAT NEWS SERVICE BULLETIN 126.05 FROM AMSAT HQ
SILVER SPRING, MD MAY 6, 1989
TO ALL RADIO AMATEURS BT

AO-10 Is Back "On-Line" For OSCAR Satellite Users Until September

AMSAT Ground Command Stations, VK5AGR and DB2OS, want to inform OSCAR satellite users that AO-10 is now back "on-line" for Mode B operation as of May 1, 1989. AO-10 users are asked, however, NOT to use AO-10 during MA 226 to MA 024 because it is in total darkness and thus no power is being generated by its solar cells. In order to save battery power and help extend the life of the batteries, operations during this "solar eclipse" period is NOT allowed. After July 13, 1989, AO-10 will be will "full-sun" conditions until September and can be used for the entire orbit. So until further notice or until you hear "FM-ing" on AO-10 please adhere to the following operating schedule for AO-10:

de DB2OS 01May89: *** AO-10 TRANSPONDER SCHEDULE ***
01May89 to 13Jul89

Mode-B : from MA 025 to MA 225

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                    OFF     : from  MA 226 to MA 024

de DB2OS  01May89:   ***  AO-10 TRANSPONDER SCHEDULE ***
                          14Jul89 to 01Sep89

                    Mode-B  : from  MA 000 to MA 225
                    OFF     :             %

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AMSAT SHORT BURSTS

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SILVER SPRING, MD MAY 6, 1989
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AMSAT SHORT BURSTS

AO-13 Operations Net Schedule For May

Many AO-13 users are unaware that there is an AMSAT Operations Net which
is conducted on AO-13 several times each month to help answer questions
about OSCAR satellites and to provide information about the many exciting
things going on in AMSAT.  The following is a list of the times for the
Ops Net.  Please place this list in a convenient place in your OSCAR
station so that you won't miss out on this interesting net which is
offered as a service to all AMSAT members.

Here is the Ops Net schedule through June:

Date     UTC    orb-phs   NCS

07 May  0300    687-116   N5BF   (06 May local time, U.S.)
14 May  0400    702-056   N5BF   (13 May local time, U.S.)
21 May  0200    716-188          (20 May local)
28 May  0200    731-105          (27 May local)

FO-12 Operating Schedule For May

The following is the operating schedule for FO-12 for the entire month of
May:

DATE       MODE      OPERATING PERIOD
05/03/89    JA        07:15 UTC until 15:26 UTC
05/06/89    JA        14:46 UTC until 05:40 UTC on 05/07/89
05/09/89    JA        05:53 UTC until 14:05 UTC
05/21/89    JD        03:11 UTC until 11:23 UTC
05/24/89    JD        08:41 UTC until 01:37 UTC on 05/25/89
05/28/89    JD        00:56 UTC until 09:08 UTC

Roy Welch, W0SL, has just recently finished putting the "finishing
touches" on his ORBITS II, ORBITS III, and ORBITS IV satellite tracking
programs.  One of the most notable aspects of the ORBITS IV program is
that it will support VGA graphics monitors.  If you would like to find out
more about these fine tracking programs and the features which they
possess, send a s.a.s.e. to:

     Roy Welch, W0SL
     908 Dutch Mill Dr.
     Manchester, MO 63011

Because the Cosmonauts had to leave the Mir Space Station last week due to
electrical power subsystem problems, perhaps now is a good time for all
radio amateurs who have made contacts with U1MIR, U2MIR,...,U5MIR to send
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in their QSL cards for confirmation of the contact. The following is the address where they should be sent:

Boris Stepanov, UW3AX
P.O. Box 679
Moscow, 107207 USSR

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